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the first screen and you finish the moss from the top. After washing both sides place the moss on any absorbing pad, and when the water has been absorbed it is ready for final arrangement and drying.

The dirt may be thus removed from patches of protonema bearing small mosses like *Ephemerum* leaving it like a piece of fine green veiling, but minute gregarious mosses must be washed with great care on a fine screen.

The apparatus can be used in any bathroom, by doing the washing over a basin or other wide dish and emptying the basin into a bucket as soon as it gets full. After standing a few minutes the water can be decanted from the mud into the water closet bowl, and at the end of the work the mud carried out and emptied into the ash can. I have thus used mine over the stationary tubs in the laundry.

Old herbarium specimens can be cleansed almost as well as fresh ones by first softening them thoroughly in a basin of warm water; but! if fruited and the operculum is still on the capsules, remember!! *that if you wet them they will probably cast their operculi*, hence it is best *not to wash or wet operculate mosses after they have once become dry*.

Sterile or non-operculated mosses will not be injured by the process.

DAYTON, OHIO.

COLLECTING MOSSES IN FLORIDA

A. J. GROUT

It was my good fortune to spend Holy Week in April, 1911, in Florida, and my still better fortune to spend it with one of our members, Mr. Samuel C. Hood, at Orange City. Mr. Hood has for some time been in charge of the government food and drug plant experimental farm at Orange City and knows the ways of the country thoroughly and, in addition, he put himself, his motor boat and his horse at my disposal. This made it easy to accomplish much more than would have been possible otherwise. My plans included a visit to another member who has done notable work in bryology, Mr. Severin Rapp, at Sanford, but unavoidable circumstances prevented.

There are two quite distinct sets of conditions, each of which produces a moss flora peculiar to itself. The greater portion of the country in this vicinity consists of sand plains, originally covered with long leaf pine, but now largely grown up to scrub of various sorts. Mosses in this area are few and usually scanty.

Along the St. Johns River and its tributaries with their low lying mucky shores and innumerable connecting swamps and "dead rivers" or lagoons, there is a rich moss flora of an entirely different type.

In the sand plains one finds an abundance of *Ditrichum*, especially *D. pallidum* (Schreb) Hampe. and *Weisia viridula* (L.) Hedw., much of which is the var. *longiseta* (L. & J.), for common northern species are often so modified here as to be scarcely recognizable yet the intergrading forms between the north and south

are so abundant and complete as to make it advisable to consider many of these southern modifications as varieties rather than species.

I expected to find many forms of *Bruchia*, *Pleuridium* and *Dicranella*, but not one was found in fruit except *D. heteromalla Fitzgeraldii* (R. C.) Grout.

Where the sand is rather moist and contains some vegetable matter or lime *Thuidium microphyllum* (Sw.) Best. and its var. *Ravenellii* S. & L. are very abundant, also several species of *Bryum* including the pretty, easily recognized *B. coronatum*. Funarias are not rare, but *F. flavicans* Mx. seems as frequent as *F. hygrometrica* and its common variety *patula* B. & S. *Macromitrium rhabdocarpum* Mitt. grows on shade trees, reminding one of *Orthotrichum* or *Drummondia*.

Around the bases of trees in rather moist sandy woods is an exceeding abundance of *Octoblepharum albidum*, *Leucobryum sediforme* and *Plagiothecium micans* (Sw.) Paris. This is equal in variability and richness of forms to any of the *Drepanocladii* (*Harpidia*). It is found on logs, roots and moist soil. In dry places it is in thin mats of short dense-leaved stems and branches; in wet places it becomes long and lax and slender. After a few days one gets so that any small yellow-green moss with *Hypnum* facies is rejected as only another *micans*. *Eurhynchium serrulatum* (Hedw.) Kindb. a much larger moss, but of a similar color and a *Plagiothecium* habit is also frequent. In such localities there is sure to be a great abundance of *Raphidostegium adnatum* (Mx.) B. & S. on the lower parts of tree trunks. This is easily recognized by its Pylaisia-like appearance. *R. Kegelianum* (C. M.) R. & C. var. *Floridanum* R. & C. is to be found in such places, but I missed it, though both Mr. Rapp and Mr. Hood have collected it.

Here also the tawny green masses of *Syrrophodon floridanus* Sulliv. are frequent, resembling *Tortella tortuosa*, but rather darker in color and fruiting more frequently. Occasionally on dead logs and stumps is found the much smaller *S. Texanus* Sulliv. with its frequently gemmiferous leaves.

Here and elsewhere one notices the absence of Mniums. The large slender *Rhisogonium spiniforme* (L.) Bruch, usually sterile, being almost the only one of the *Mnieae* I saw. It was growing on black, shaded, wet soil, a typical *Mnium* habitat, but is more frequent on palmettoes according to Mr. Hood. *Leptotheca Wrightii* Sulliv. growing on wood also occurs, but I did not collect it. Its capsules look like those of a very large *Thelia*.

But it is the deep shaded cypress swamps that delight the heart of a bryologist. Here the mosses grow on the damp trees logs and stumps, in a profusion almost equal to that of the northern mountains, but are much less profuse on the soil. But while the mosses seem as abundant, the number of species is surely much smaller as a rule. I had heard so much about snakes, particularly the water moccasin, that at first I kept a sharp lookout around and about, for they frequently climb trees, but hogs had been turned out to run wild by the settlers and they had pretty nearly exterminated the snakes. The hogs were not razor backs either, but civilized porkers such as you might see in a New England barn yard, or at least such was the case with a sow and three day old litter I scared out of a nest under the banks of the St. John's River.

It was rather early and cool for mosquitoes, but there were numerous large

black fellows seemingly twice as big as the largest Jerseyite. But friend Hood had concocted an aromatic "Skeet Skoot" that I placed on my hat and coat sleeves which rendered me immune. So effective was it that I hope it may be offered to the world for the relief of the many long-suffering sea shore vacationists and mountain campers.

In these swamps the cypress knees, stumps and dead logs are well covered with mosses as is also the bark of most of the other trees. Here are found *Fissidens subbasilaris* Hedw., very common, also *Forsstroemia trichomitria* (Hedw.) Lindb., and its var. *immersa* (Sulliv.) Lindb., which seems to me to be worthy of specific rank.

On the wet wood in and around the water *Amblystegium floridanum* R. & C., *Cryphea glomerata* B. & S., *Entodon seductrix* (Hedw.) C. M., and *Leskea microcarpa* are frequent. *Schlotheimia Sullivantii* Muell., *Fissidens incurvus* Schwaegr., *Papillaria nigrescens*, *Forsstroemia floridanus* (Lindb.) Kindb., *Tortella caespitosa* (Schwaegr.) Limpr., *Amblystegium varium* (Hedw.) Lindb., *A. irriguum* (Hook. & Wils.) B. & S., *Clasmatodon parvulus* (Hampe) Sulliv. are occasional.

If one is fortunate he will pick up *Fissidens Donellii* Aust., *F. Garberi*, L. & J. and *Entodon Drummondii* (B. & S.) J. & S. *Sphagnum* appeared to be less abundant than in our northern bogs, and only occasional masses were noticed, but I am informed on good authority that this is not typical and that Florida has a very rich *Sphagnum* flora.

*A REMARKABLE FORM OF DICRANELLA HETEROMALLA Schimp.

By H. N. DIXON, M.A., F.L.S.

IN May of this year, Mr. C. P. Hurst sent me a gathering of *Dicranella* which presented a very unusual appearance. The foliage was unmistakably that of *D. heteromalla*, but the capsules were quite unlike those of that species. Instead of being elongate, castaneous brown, inclined, and plicate when dry, on long straw-colored setæ, they were short, small, deep reddish brown, almost erect and symmetrical, smooth when dry, wide-mouthed, and on very short, red, often deep red, setæ, so as to be almost immersed in the tufts. They presented indeed very much the appearance of the fruit of *D. varia*, and this was enhanced when, as was occasionally the case, the peristome, just expanded, showed the long, deep purple teeth characteristic, of some forms especially, of that species. There seemed to be a good *à priori* case for a hybrid form, viz., *heteromalla* ♀ × *D. varia* ♂. Careful search by Mr. Hurst, however, entirely failed to detect the presence of *D. varia* in the immediate vicinity, while on the other hand it showed that the fruiting plant in question covered a much wider range than was at first supposed.

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